

WHAT IS CLAIMED IS:

Sub A1 >

2 1. A lighting system for a display, comprising:
3 a light source providing invisible light having a wavelength in
4 a spectrum not visible to the human eye;
5 a reflective layer having at least one of a phosphorescent and
6 a fluorescent surface reflecting the invisible light from the light source and
7 converting the invisible light into visible light visible to the human eye;
8 and
9 a display layer in which pixels of the display layer may be
10 altered by applying an electrical charge to the display layer in a controlled
11 manner, the display layer being illuminated by the visible light from the
reflective layer.

1 2. The lighting system of claim 1, wherein the light source
2 includes a light guide.

1 3. The lighting system of claim 1, wherein the light source is
2 provide above the display layer.

1 4. The lighting system of claim 1, wherein the light source is
2 provided below the display layer.

1 5. The lighting system of claim 1, wherein the reflective layer
2 includes phosphorescent coatings on a substrate.

1 6. The lighting system of claim 1, wherein reflective layer
2 includes metallized coatings on a substrate.

1 7. The lighting system of claim 1, wherein the reflective layer
2 includes fluorescent coatings on a substrate.

1 8. The lighting system of claim 1, wherein the light source
2 includes a light emitting diode (LED).

1 9. The lighting system of claim 1, wherein the light source
2 provides at least one of ultraviolet (UV) light and infrared (IR) light.

1 10. A method of producing an image on a display;
2 generating a source of invisible light, the light having a
3 wavelength in a spectrum not visible to the human eye;
4 distributing the invisible light over the surface of a reflective
5 layer, the reflective layer including at least one of a phosphorescent and a
6 fluorescent surface;
7 reflecting the invisible light from the light source by the
8 reflective layer;
9 converting the invisible light into visible light visible to the
10 human eye; and
11 illuminating a display element with the visible light, the
12 display element including individually selectable pixel elements.

1 11. The method of claim 10, wherein the source of light includes
2 a light emitting diode (LED).

1 12. The method of claim 10, wherein the invisible light includes
2 light having wavelengths in the ultraviolet (UV) spectrum.

1 13. The method of claim 10, wherein the invisible light includes
2 light having wavelengths in the infrared (IR) spectrum.

1 14. The method of claim 10, wherein the reflective layer includes
2 a metallized surface.

1 15. The method of claim 10, wherein the display element is a
2 liquid crystal display element.

1 16. The method of claim 10, wherein the display element is an
2 electronic paper (e-paper) display element.

Sub A2 >

2 17. A display system, comprising:
3 a light source providing invisible light having a wavelength in
4 a spectrum not visible to the human eye;
5 a light guide, dispersing the invisible light over a defined
6 region;
7 a light converter, converting the invisible light to light having
8 a wavelength visible to the human eye; and
9 a liquid crystal display layer receiving and transmitting the
 visible light.

1 18. The display system of claim 17, wherein the light guide
2 overlays the liquid crystal display.

1 19. The display system of claim 17, wherein the liquid crystal
2 display overlays the light guide.

1 20. The display system of claim 17, wherein the light converter
2 includes phosphorescent coatings on a substrate.

1 21. The display system of claim 20, wherein the light converter
2 includes metallized coatings on the substrate.

1 22. The display system of claim 17, wherein the light converter
2 includes fluorescent coatings on a substrate.

1 23. The display system of claim 23, wherein the light converter
2 includes metallized coatings on the substrate.

1 24. The display system of claim 17, wherein the light source and
2 light guide combine to form a front lighting system.

1 25. The display system of claim 17, wherein the light source and
2 light guide combine to form a back lighting system.

1 26. The display system of claim 17, wherein the light source
2 includes a light emitting diode (LED).

1 27. The display system of claim 17, wherein the light source
2 provides at least one of ultraviolet (UV) light and infrared (IR) light.

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